OPHTHALMIC ECHOGRAPH

BIOMETRY AND PACHYMETRY

Axis II PR

SERVICE MANUAL

2003 CE 0459

Directive 93/42/EEC

XE AX2 MT AN

OCTOBER 2009

QUANTEL MEDICAL

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WARRANTY :

* Any adjusment and calibration procedure described in this manual shall be performed by QUANTEL MEDICAL authorized technicians only or by personnel who has been previously trained by QUANTEL MEDICAL.

* Any faulty part will be replaced by a strictly identical one provided by QUANTEL MEDICAL.

* For safety reasons, QUANTEL MEDICAL considers any electronic board as a whole partial assembly :

* Defective boards must be returned to QUANTEL MEDICAL for replacement.

* Warranty will be void if a board has been damaged during maintenance or attempt to repair.

Warranty will be void unless these recommendations are strictly respected.

WARNING:

Special training delivered by QUANTEL MEDICAL is required for technicians prior to performing maintenance on the equipment in order to ensure optimum adjustment and maximum reliability of the whole instrument.

IMPORTANT: Before performing any maintenance or repair on the equipment, ensure that all the system/user configuration and parameters are saved in order to be restored after if needed.

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1-1 ELECTRICAL REQUIREMENTS

- Power supply: External module with automatic voltage adaptation, no selection is needed.

Input Voltage:	110 to 230 Vac ± 10% single phase without earth
Frequency:	50 or 60 Hz
Mains consumption:	20 VA
AXIS-II consumption:	5.4 W (450mA on 12Vdc)
Class II Power Supply:	Reinforced Isolation.

- References:		SSL20-7612	Trade Mark:	ARTESYN Technologies
	or	ESS36US12-1E	Trade Mark:	XP POWER
	or	TR30M120-01E03	Trade Mark:	CINCON

- Compliance: Power supply and enclosure designed per **IEC 60601-1**
European directive: **93/42/CEE**
Electromagnetic compatibility: **IEC 60601-1-2**

1-2 ENVIRONMENTAL CONDITIONS

The temperature of the room where the device is operated must be within the following range:

50°F < T° < 95°F (10 °C < T° < 35 °C)

The relative humidity must not exceed **95%** without condensation.

The Device storage and transport temperature must be within the range:

- 4°F < T° < 158°F (-20 °C < T° < 70 °C)

1-3 HOUSING MATERIAL

Upper frame:	Polystyrene PS CHOC complies with UL 94 VO standard
Lower frame:	Painted steel sheet
LCD front panel:	Polycarbonate

1-4 SPARE PARTS

Important: when ordering a spare part, the device serial number and the software version must be provided.

PARTS LIST	
REFERENCE	**DESCRIPTION**
XE AX2 CABLE RS232	RS232 Cable
XE AX2 CPU	Main Board for V1.xx
XE AX2 CPU V2	Main Board for V2.xx
XE AX2 CPU V3	Main Board for V3.xx
XE AX2 CPU V5	Main Board for software V4.xx and V5.xx
XE AX2 LCD	B&W LCD screen
XE AX2 LCD COLOR	Color LCD screen
XE AX2 PCB VIDEO	Video Interface Board for V1.xx & V2.xx
XE AX2 PCB VIDEO V3	Video Interface Board for V3.xx
XE AX2 PCB VIDEO V5	Video Interface Board for V4.xx &V5.xx
XE AX2 PLEXI	Plexiglas Screen
XE AX2 FAV CLV	Plastic housing with Keyboard
XL VIT BOUTON	Knob
ACCESSORIES/OPTIONS LIST	
REFERENCE	**DESCRIPTION**
XE AX2 EXT POW	Power Supply : SSL20-7612 / Artesyn
XE AX2 PRB BIO	TP-01-b probe
XE AAA PAM	Hand-piece for biometry probe
XE PRB BIO L	Biometry probe with laser pointer
XE AAA PRB PK	Pachymetry probe
XE AX2 OPT PK	Pachymetry option
XE AAA PED	Pedal
XE AX2 TEST BLOC	Test block (Biometry)
XE AX2 PSD PK	Pachymetry probe holder + test block
XE CLV USB AZ	External USB Keyboard (AZERTY)
XE CLV USB QW	External USB Keyboard (QWERTY)
XE HUB USB	USB Hub
XE CLE USB	USB storage Key
XE AX2 HOUSSE	Dust Cover
XE AX2 VALISE	Axis-II Bag

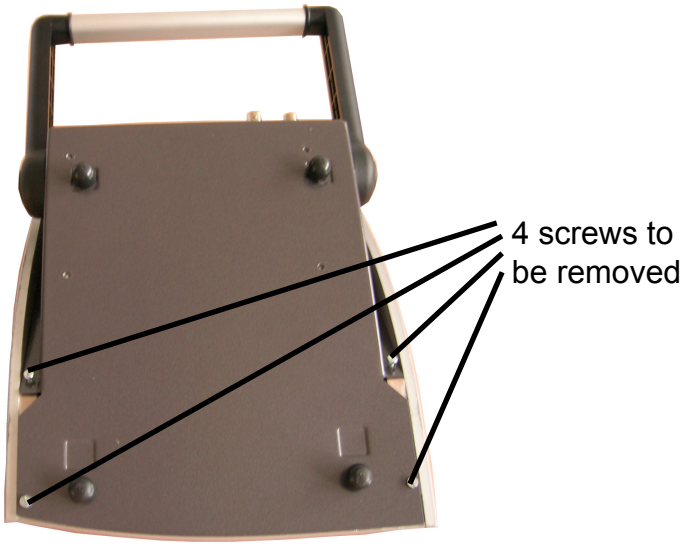
2-1 EXTERNAL VIEW

2 - INSIDE ACCESS

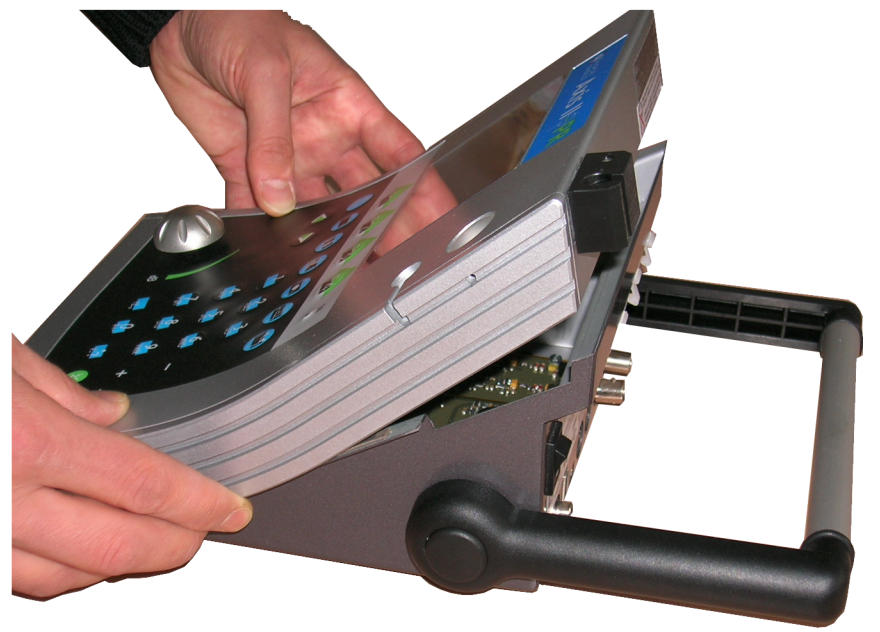
2-2 HOW TO OPEN THE CASE

- From the bottom panel, unscrew the 4 screws as shown.

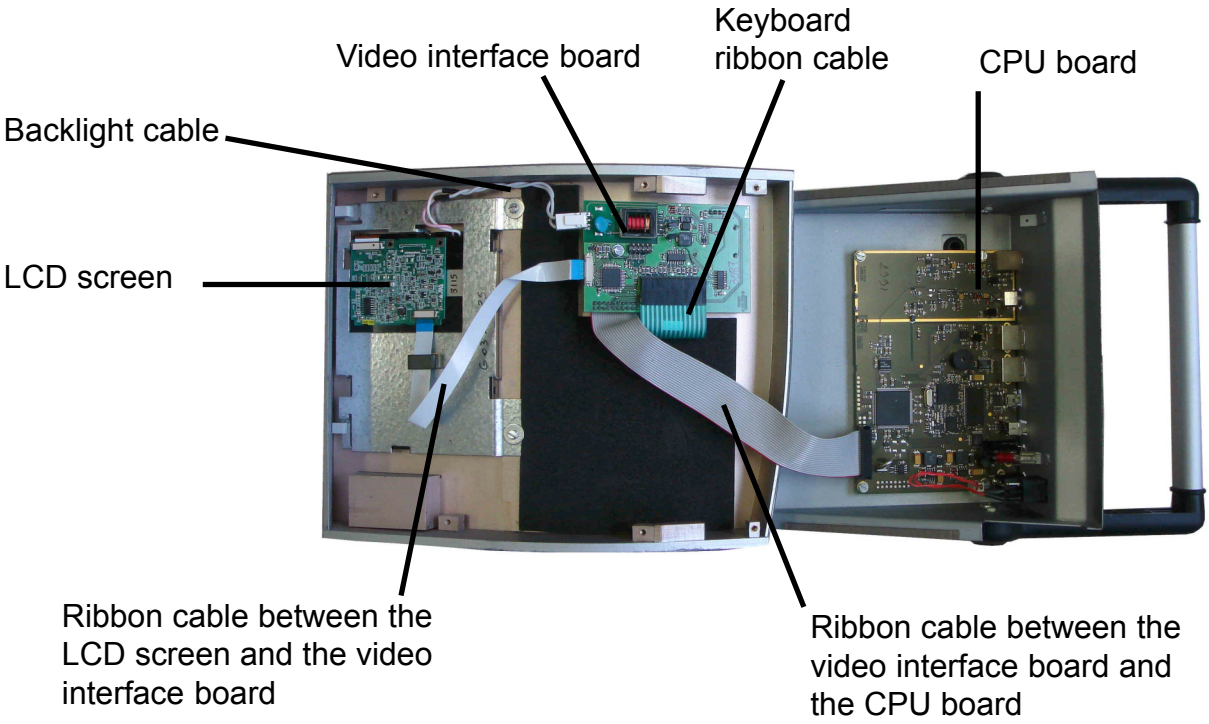
Axis-II Bottom view



- Put the device on the normal position and lift up the upper part of the case verticaly as shown.

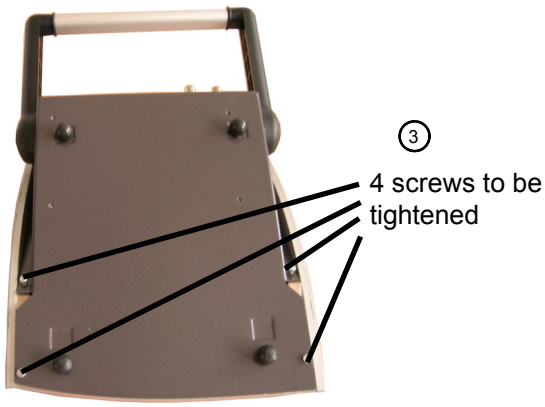


2-3 INSIDE VIEW


Video interface board
Keyboard ribbon cable
CPU board
Backlight cable
LCD screen
Ribbon cable between the LCD screen and the video interface board
Ribbon cable between the video interface board and the CPU board

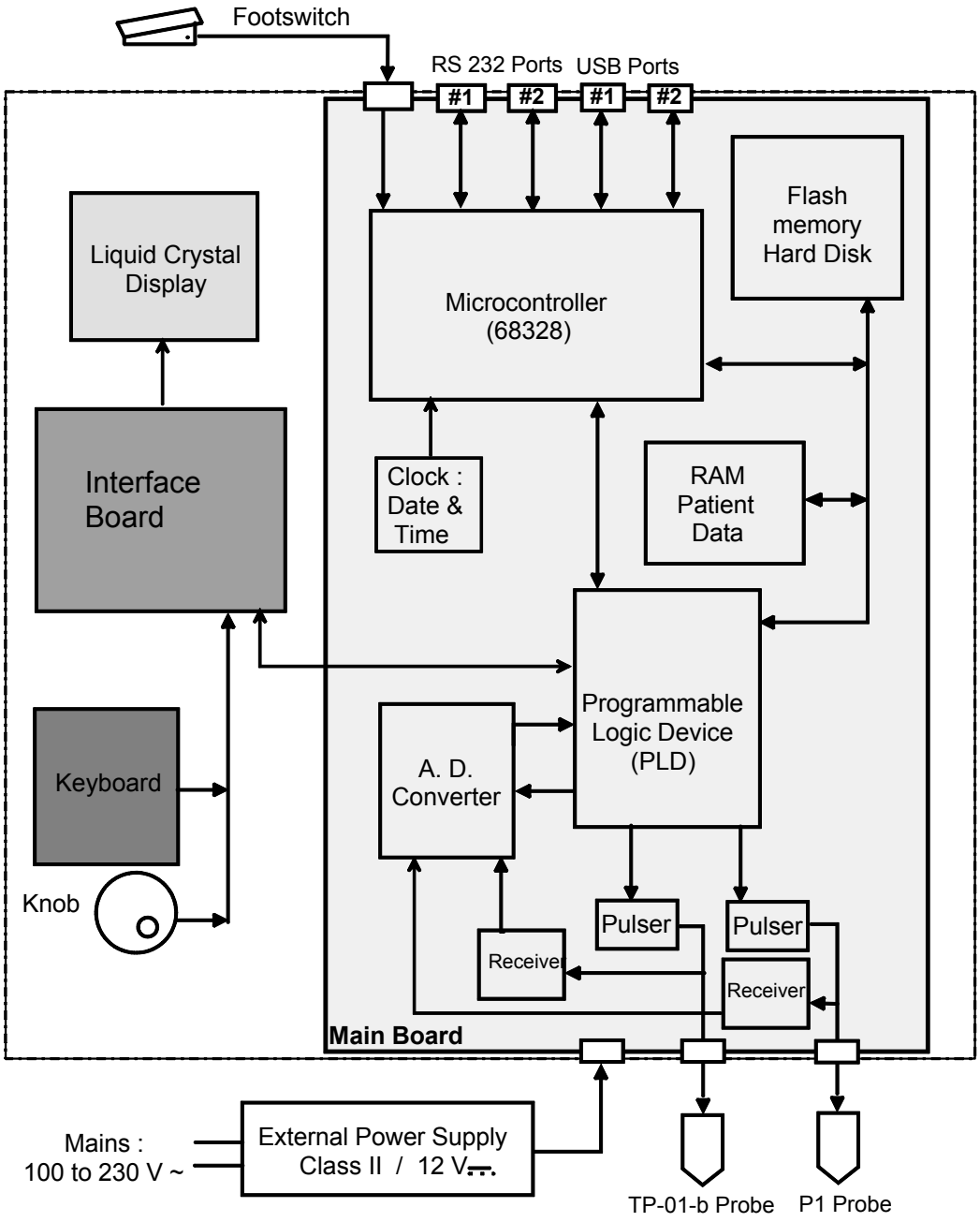
2-4 HOW TO CLOSE THE CASE

- Put the cover back from the top side (1) first then the other side (2). Put the device up-side-down and tighten the 4 screws (3).

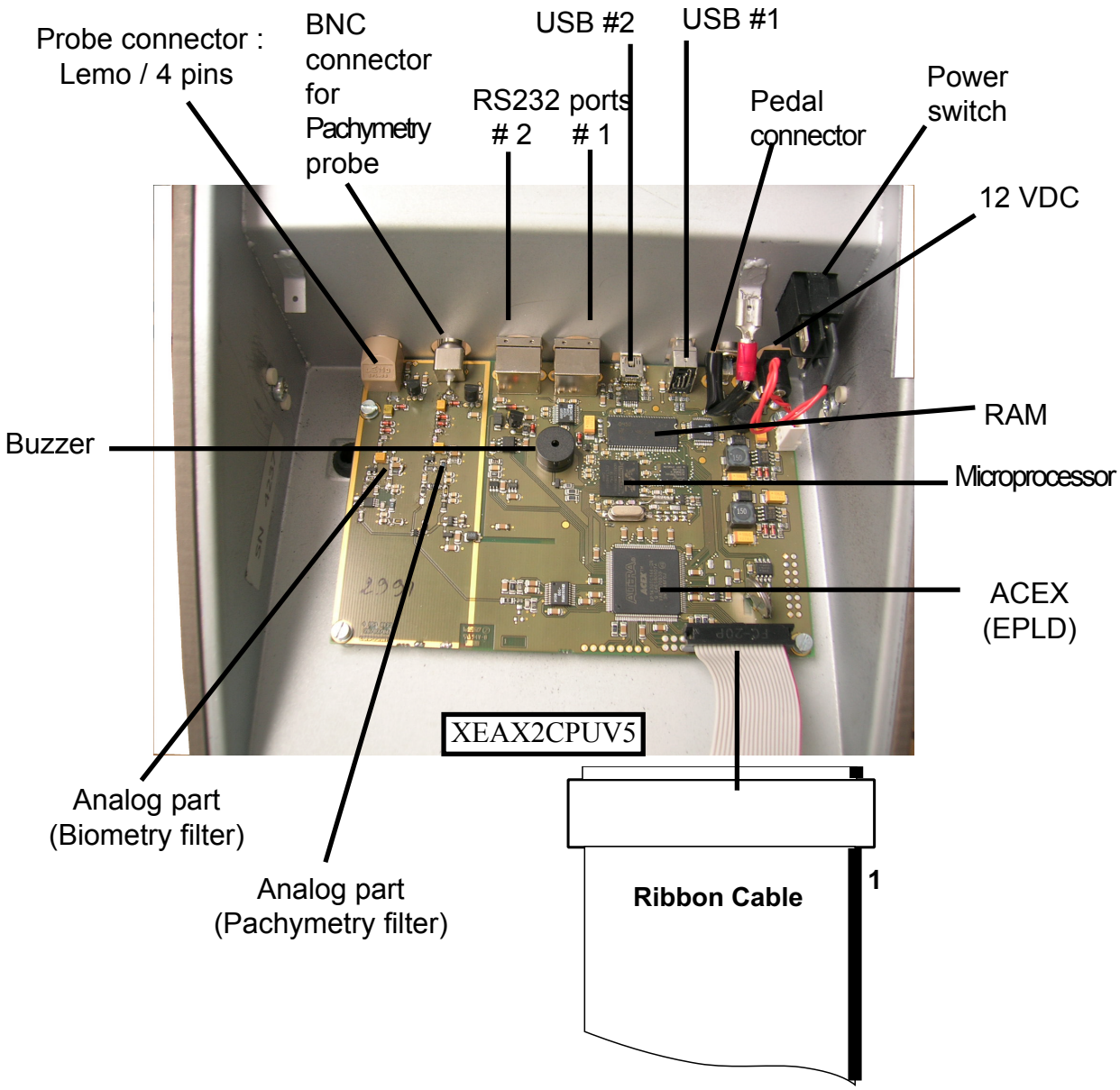


3 - BOARD DESCRIPTION

3-1 BLOCK-DIAGRAM



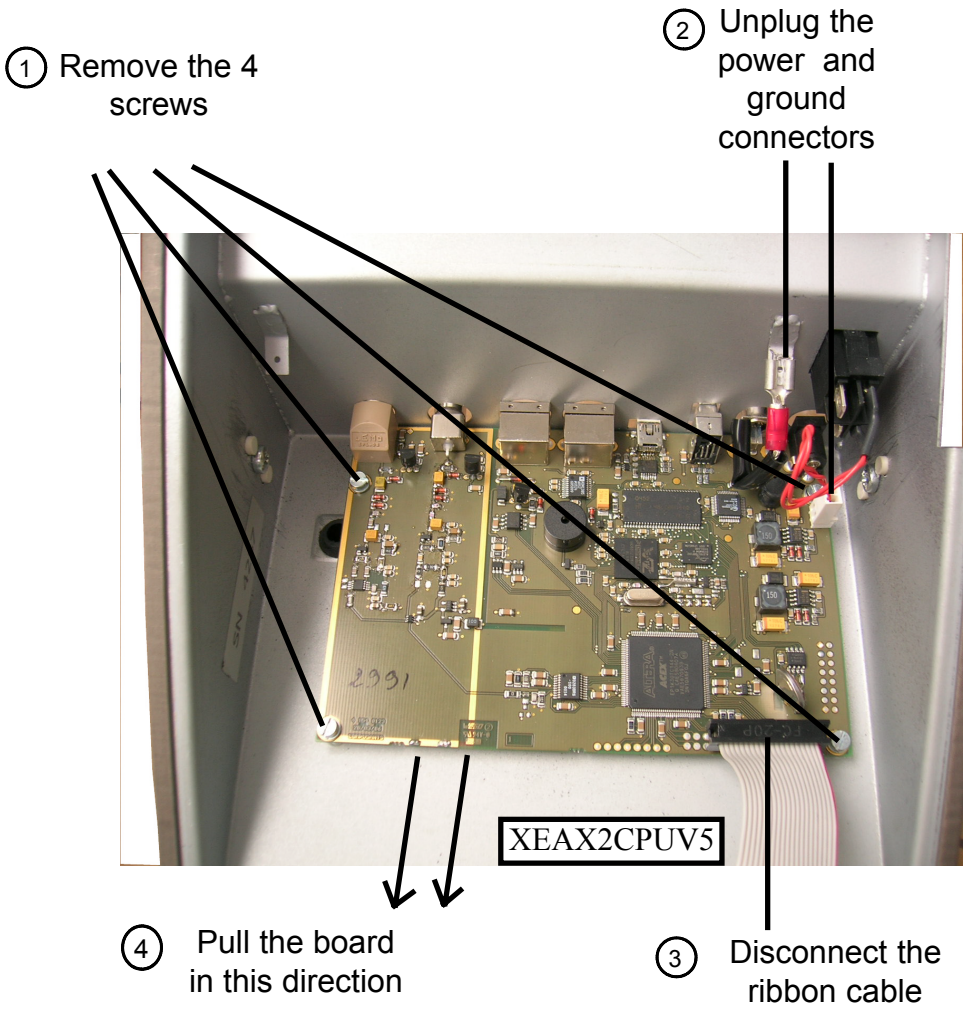
3-2 CPU BOARD



Link to the Keyboard Interface via the ribbon cable with 20 wires.
Important : pin # 1 is red

3 - BOARD DESCRIPTION

3-3 REPLACING A CPU BOARD

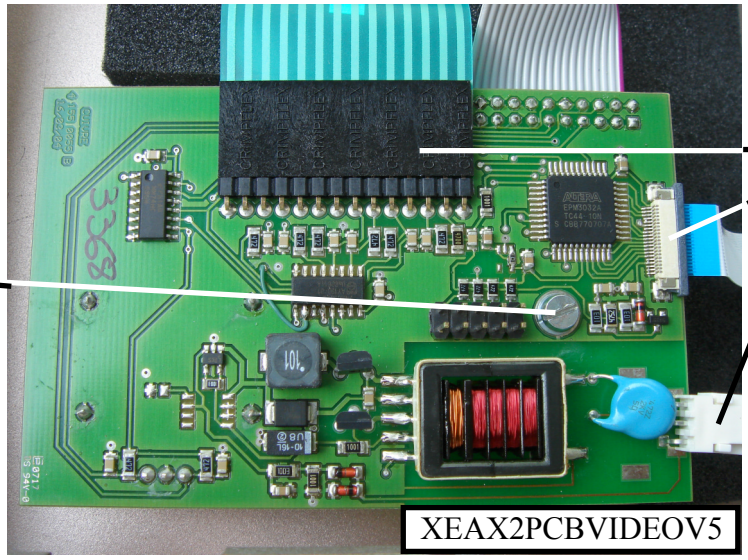

1 Remove the 4 screws
2 Unplug the power and ground connectors
XEAX2CPUV5
4 Pull the board in this direction
3 Disconnect the ribbon cable

5 To replace the board, perform the steps above in reverse order

Warning: the faulty board must be returned to QUANTEL MEDICAL as a whole without unmounting or opening any component. Failure to comply will void the equipment warranty.

3-4 REPLACING A VIDEO INTERFACE BOARD

1 Remove the knob by pulling it vertically then unscrew the nut underneath



2 Remove the screw

3 Unplug the connectors

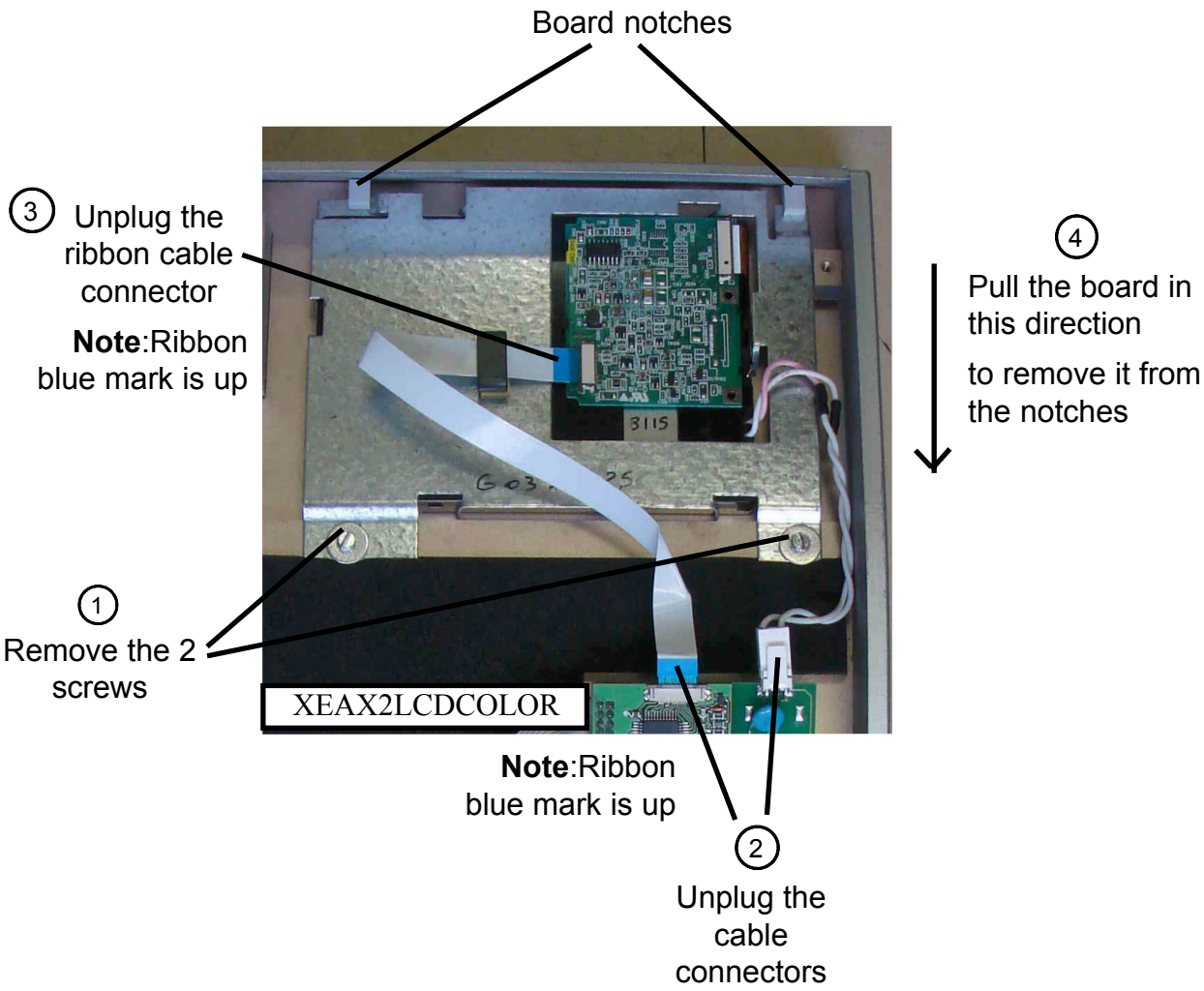
4 Remove the board

5 To replace the board, perform the steps above in reverse order

Warning: the faulty board must be returned to QUANTEL MEDICAL as a whole without unmounting or opening any component. Failure to comply will void the equipment warranty.

3 - BOARD DESCRIPTION

3-5 REPLACING AN LCD SCREEN

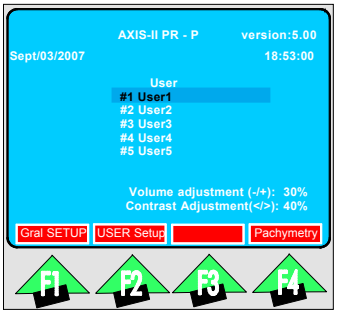

Board notches
3 Unplug the ribbon cable connector
Note:Ribbon blue mark is up
4 Pull the board in this direction
to remove it from the notches
1 Remove the 2 screws
XEAX2LCDCOLOR
Note:Ribbon blue mark is up
2 Unplug the cable connectors

5 To replace the board, perform the steps above in reverse order

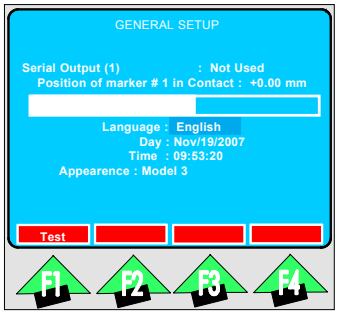
Note: Before disconnecting the ribbon cable, note the polarizing position (blue side up) for future reconnection. On the V5 board, the ribbon cable can be disconnected from both end while on earlier version boards, the cable can be removed only on one end.

Warning: the faulty board must be returned to QUANTEL MEDICAL as a whole without unmounting or opening any component. Failure to comply will void the equipment warranty.

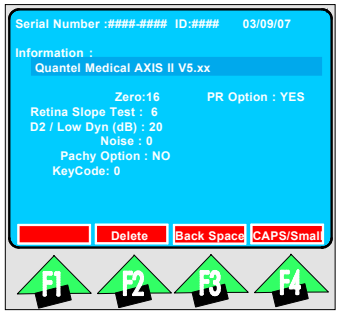
4-1 HIDDEN PAGE ACCESS



1 Press F1



2 Move cursor on "Language" filed and press

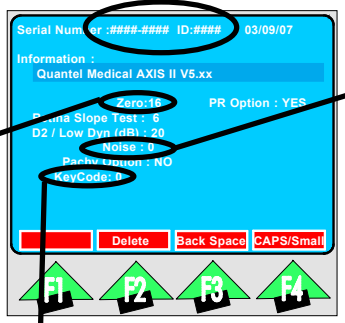


3 The hidden screen is then displayed

4-2 FIELD DESCRIPTION

Information field. Use F2 (delete character), F3 (backspace) and F4 (Caps/ small) to enter characters.

Serial number, required for pachymetry activation (refer to the activation guide XE AX2PK NI).



To be adjusted for a right noise level in biometry mode (see section 4-2-4 "Noise level setting") and to be used for general reset (see section 4-4 "General reset").

To be adjusted according to the manufacturer of the probe and to be used to activate the PR option (see section 4-3).

Keycode to be entered to activate the pachymetry option (refer to the activation guide).

4-2-1 Field “ZERO” and Position of Marker #1

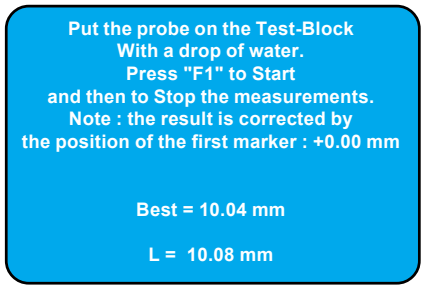
The default value of this field is “**16**” and is given by the manufacturer of the biometry probe. This value can be different with another manufacturer and it depends on the size of the probe tip.

Adjusting “Zero” will impact the mesured values during acquisition as follows:
- decreasing **ZERO** by **1** will increase the mesured value by **0.04mm** (with the “**Position of marker #1 in contact**” of the general setup page as **0.00mm**).

The test block has been developed as a standard in contact technique to calibrate the measurement of the eye and adjust the corresponding parameters. Follow the steps below to enter the correct value in “Zero”.

1. Make a biometry acquisition on the test-block:

- from the Main page, press F1 to go to the General Setup page,
- move the cursor to “Position of marker #1 in contact”
- press F1 and follow the instructions on the screen as below:


Put the probe on the Test-Block
With a drop of water.
Press "F1" to Start
and then to Stop the measurements.
Note : the result is corrected by
the position of the first marker : +0.00 mm
Best = 10.04 mm
L = 10.08 mm

2. The mesured value X (displayed as “Best”) must be

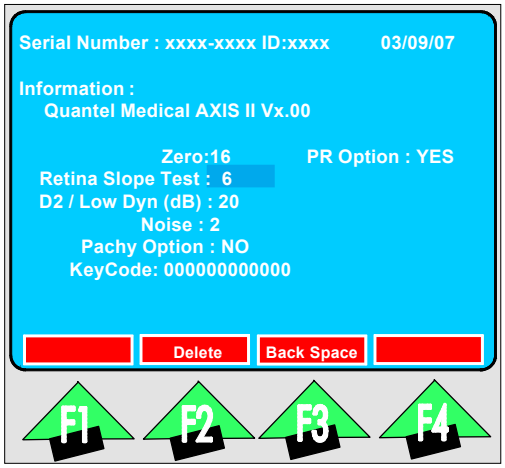
10.00 < X < 10.11mm

3. If X is not within this interval, modify ZERO so that X will fit into these limits (knowing that 1 unit of ZERO corresponds to 0.04mm of X).

Ex: X=9.96mm, ZERO can be adjusted to: 12 < ZERO =< 15

Note: Instead of modifying ZERO, this correction can also be done by entering the value in the “Position of marker #1 in contact” field of the general setup page.

4-2-2 Field “RETINA SLOPE TEST”



The default value of this field is “**6**”. It defines the sharpness of the retinal peaks in order to freeze the A-scan when the probe direction is in the visual axis, reaching the macula area. This value means that the slope is raised up by 6 digital points.

It appears that the retina slope test of “4” is perfect for physicians using the Prager shell in immersion technique. This shell holds the probe in its axis and helps to keep it perpendicular to the macula.

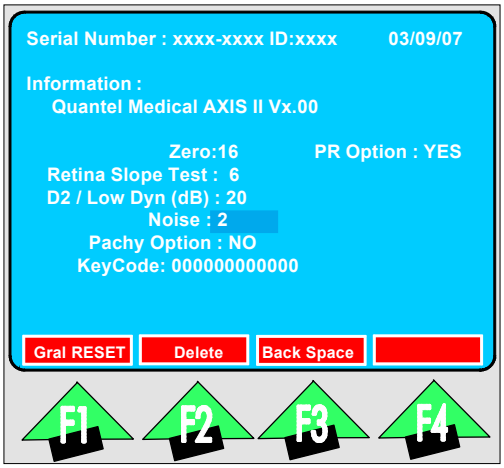
If the physician is not using the immpersion technique, but the contact one, and has difficulties to find the visual axis, the Retina Slope Test should be set to “6”. Increasing this value will make freezing easier.

4-2-3 Field “D2/LOW DYN”

The recommended value for this field is “20”. The entry range is 15 to 25dB. It corresponds to the dynamic scale to avoid distorsion during acquisition. The dynamic value is inversely proportional to the Gain value (as specified in the user setup).

The display is the same as above except that the highlighted zone is on “D2/Low Dyn”.

4-2-4 Field “NOISE”: Setting procedure



In USER Setup, select Display mode **D1.**

Noise level:

In the Acquisition page, set:

G=90db TGC = -10dB
Technique: Contact

Unfreeze the image.

The noise level must be **< 1mm.**

If the noise level is not correct, set the gain to obtain the right noise level and write down this value:

New Gain = _____ dB

Calculate the new noise value:

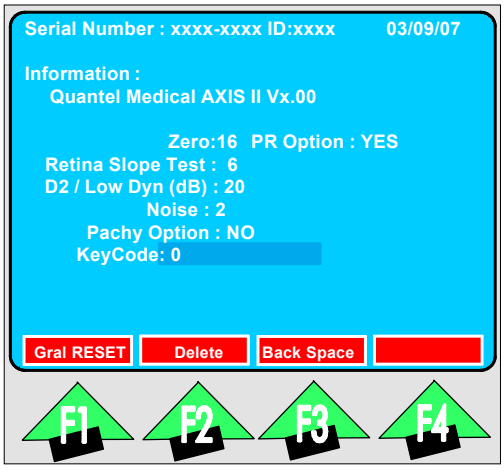
New Noise Value = 90dB - New Gain = _____

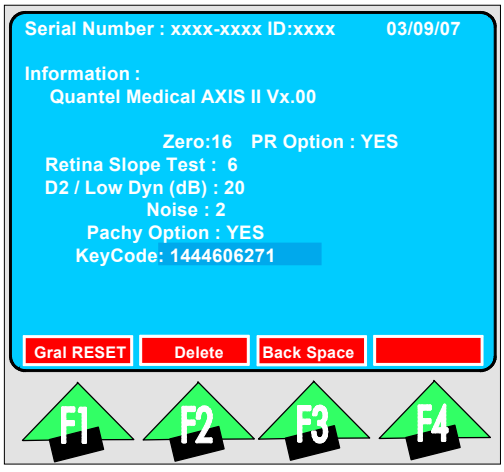
Set this value in the Noise field (of the hidden page).

Noise value = _____

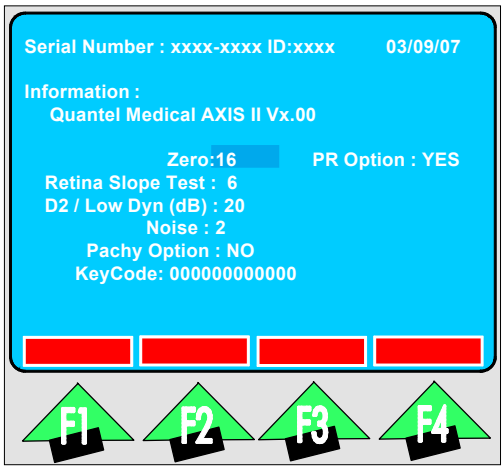
4-2-5 Field “KEYCODE”

This field is used to activate the pachymetry option by entering the right keycode (refer to the activation guide). Enter “0” in the field to suppress the pachymetry option. The below screens show the option that is not activated (Pachy Option: NO) and activated (Pachy Option: Yes).





4-3 ACTIVATING THE POST-REFRACTIVE FEATURE

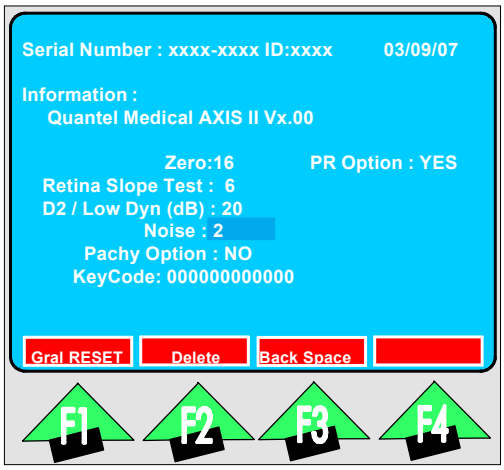


The post-refractive feature can be activated (when “PR Option: Yes” is present) or desactivated (no “PR option” is displayed).

To activate it: from the hidden screen, position the cursor on “ZERO”, press “F1”, “7”, “8” and “F4” successively. “PR Option: Yes” will then be displayed.

Pressing this key sequence again will desactivate the PR feature.

4-4 GENERAL RESET



To perform a general reset, position the cursor on “Noise” in the hidden page then press “F1: General Reset” and confirm by “Yes”.

Select “F1: Setup1” (if D1 display mode is used by default for all users) or “F2: Setup2” (if D2 is used). Wait for a few seconds then the main page will be displayed.
The D1 or D2 mode can be set manually in the “User setup” page.

Note: a general reset will erase all the setup and system parameters including PR and pachymetry options. Make sure you have written down all parameters of the User and General setup, and Hidden page before performing a general reset.

5 - PROBE CALIBRATION

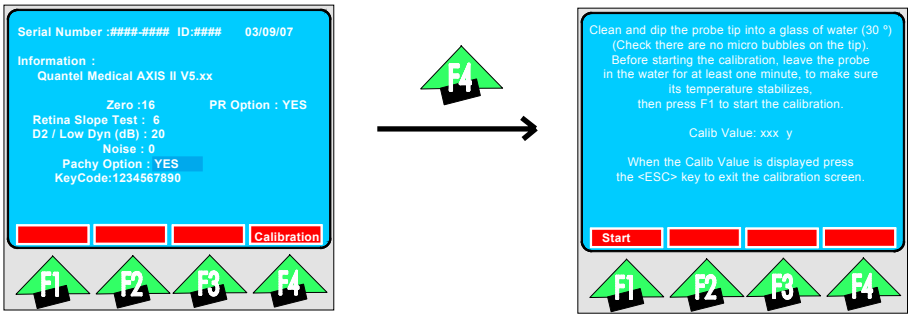
5-1 BIOMETRY PROBE

Calibrating the biometry probe consists in performing an acquisition on the biometry test block (on the front panel) then enter the correct value of “ZERO” and “Position of Marker #1 in contact” in the hidden page.

Follow carefully. the procedure as detailed in chapter **4-2-1**

Note: It is recommended to check the position of Marker #1 in contact when changing probe. If the measurement is not correct, you have to perform a calibration of the probe (see chapter 4-2-1). If the probe is not correctly calibrated, the measurements of the patient eye will not be accurate and the values are incorrect.

5-2 PACHYMETRY PROBE



The pachymetry probe must be calibrated before use:

1. in the hidden page, position the cursor on “Pachy Option” field,

2. the screen will display “calibration” in front of “F4”,

3. press “F4” and follow the instructions carefully,

4. repeat the process 4 or 5 times and check that the displayed values xxx are stable (±10).

Note: It is recommended to perform a new calibration when changing probe, in order to improve the accuracy of acquisition.

6-1 S/W VERSION COMPATIBLITY

(to) **UPGRADE** (from)	V1.11	V2.04	V3.05	V4.04	V5.0
V1.xx	**Y**	-	-	-	-
V2.xx	-	**Y**	-	-	-
V3.xx	-	-	**Y**	-	-
V4.xx	-	-	-	**Y**	-
V5.0	-	-	-	-	**Y**

Note: the software version number is displayed on the main page at the top right corner. The next paragraphs detail the recommendations when upgrading to a specific version.

6-2 UPGRADING TO V5.0

Version 5.0 can be installed only on specific device hardware that has been designed for, i.e. with a pachymetry connector on the rear panel and a handle. Refer to section 6-5 for further details.

6-3 UPGRADING TO V4.04

Version 4.04 supports the external USB keyboard or a storage USB key or a USB hub to be connected to the USB port. Ensure the device has USB ports on the rear panel and no pachymetry connector.
Refer to the installation guide XE AX2 NI AN-FR for further details.

6-4 UPGRADING TO V3.XX, 2.XX OR 1.XX

Refer to the above table for version compatibility before upgrading to a specific version. Then carefully follow section 6-5 that details the upgrading procedure.

6-5 HOW TO INSTALL A NEW SOFTWARE VERSION

6-5-1 Requirements

The following items are required for software installation or upgrade:

- RS-232 cable with a 9-pin Sub-D connector on one end and a mini DIN-6 on the other end
- disk including:
  - . the installshield program (quantelprog.exe)
  - . the new Axis II software file to be installed in *.p format

6-5-2 Save current parameters

It is recommended to save the current configuration and system parameters before upgrading or installing software.

Proceed as follows:

. General setup parameters: press F1 to display the general setup page and write down all the parameter values including those from the hidden page.

. User setup parameters: for each user from the main page, press F2 to display the user setup parameters. Write down all the parameter values, including all the IOL references.

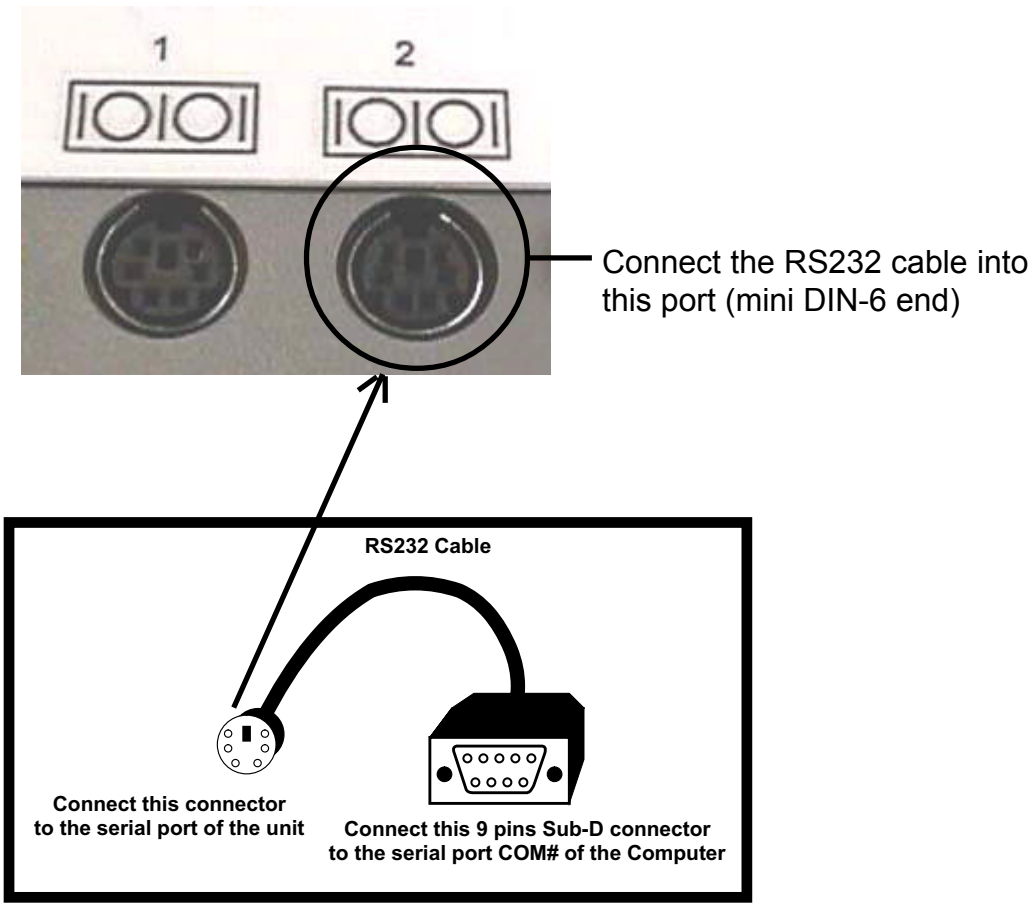
. Patient data: print all the patient information from the acquisition, results and IOL screens in the internal memory or working memory.

Note: If the current software version is 4.04 or later, the IOL can be printed by pressing the printing key while displaying the IOL table from the user setup page.

If the current version is 5.00 or later, it is recommended to print all the patient information (biometry and pachymetry acquisitions) for archive. All the patient information from the internal and working memory can be saved into a USB key.

6-5-3 Connection

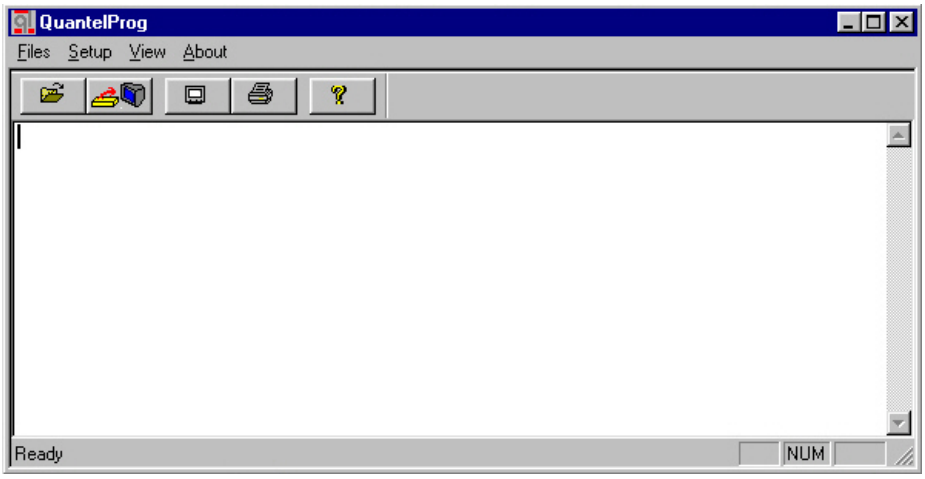
Rear panel of the Axis-II.


1
2
Connect the RS232 cable into this port (mini DIN-6 end)
RS232 Cable
Connect this connector to the serial port of the unit
Connect this 9 pins Sub-D connector to the serial port COM# of the Computer

Note: make sure the Axis II is switched off before connecting or disconnecting any cable.

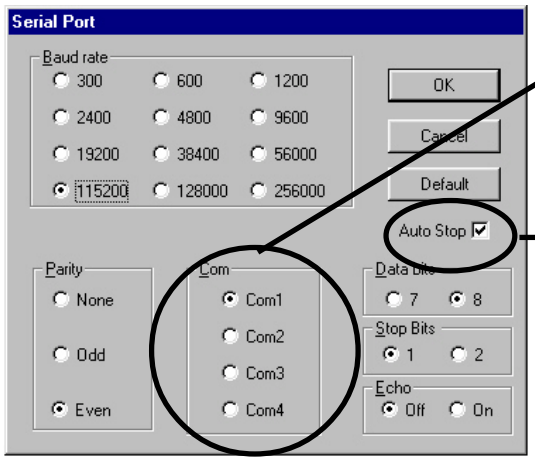
6-5-4 Run the install software (QUANTELPROG.EXE)

When running the installshield program QUANTELPROG, the following screen will be displayed:



6-5-5 Setup the communication parameters

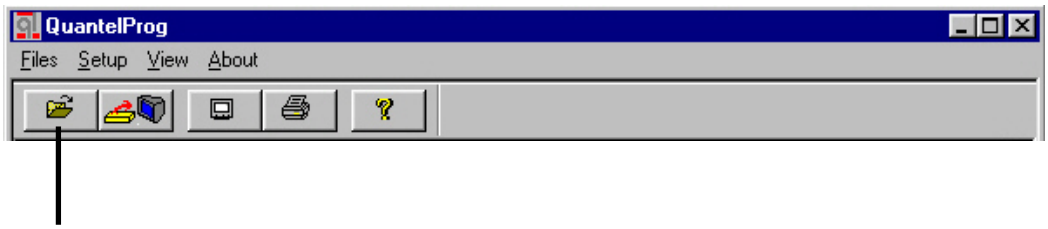
From the above Quantelprog screen, click on “SETUP” and select the following parameters:



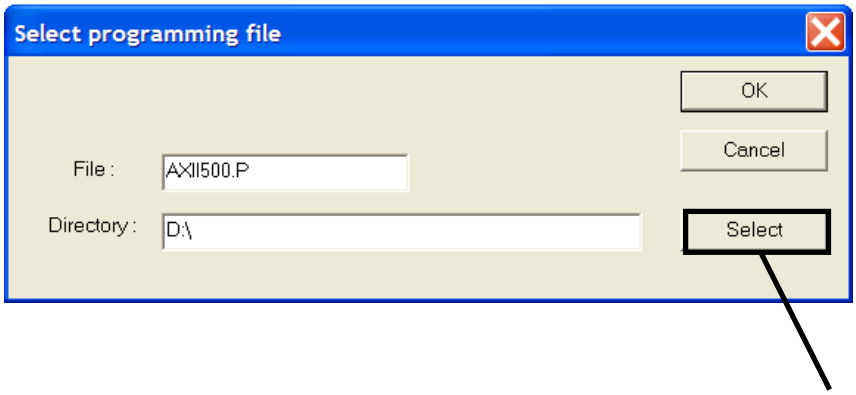
Select the correct com port on the PC side

The “Auto Stop” field must be selected.

6-5-6 Load the new software file



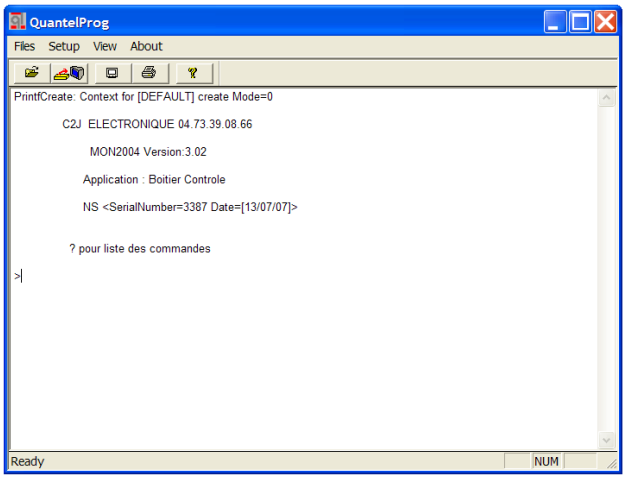
Press this button to specify the new software file location (example : D:\AXII500.p). The following page is displayed.



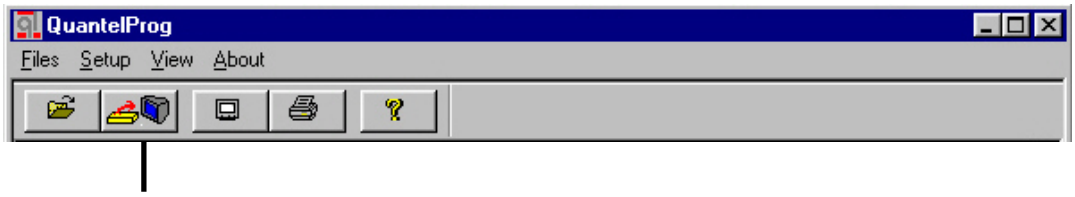
Check the “filename.p” location by browsing with the **Select key.**
Press OK to validate.

6-5-7 Switch on the Axis II

The following page is displayed when the configuration is correctly set (i.e. RS-232 cable plugged in, communication parameters set and the AxisII switched on).



6-5-8 Download the new software

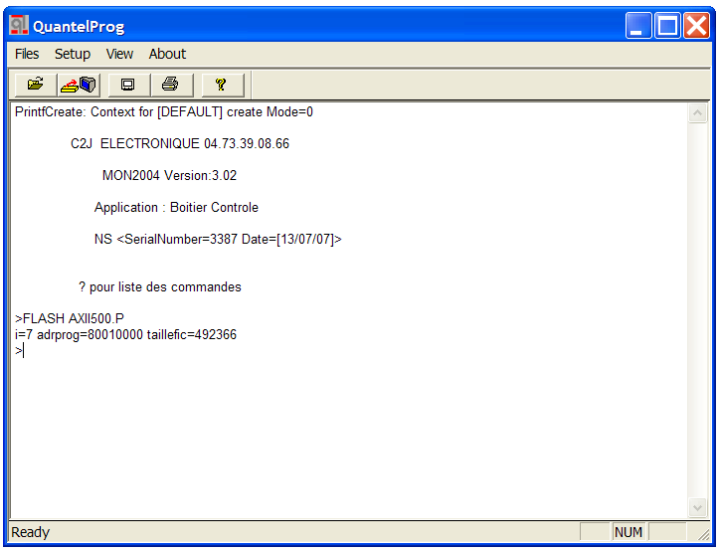


Press this button to download the new software.

The following messages will be displayed :

6-5-9 Installation completion

The following page is displayed when the download is completed and the software is installed.



Switch off the Axis II and disconnect the cable. Switch on again. An automatic reset will be performed. Press “Setup1” or “Setup2” to terminate (see chapter 4-4 General Reset for further details).

6-5-10 Restore the system parameters

Restore the parameters that have been saved in chapter **6-5-2**, including:

- general setup parameters
- hidden page parameters
- user setup parameters with the IOL references for each user

Note: Remember to perform a calibration. Follow the procedure as described in chapters 4 and 5.

7 - TROUBLESHOOTING

7-1 ERROR MESSAGE: “TRANSMISSION ERROR”

When:
During printing.

Why:
The interface with the serial printing device (Visuscan/EDR) might have trouble or is disconnected.

How:
1. Check that the serial cable (for Visuscan and EDR transfer) is correctly plugged into the Serial connector #1 at the rear panel.
2. Check that the parameter is correctly set: **PC-Visuscan(115200 8 Even 2)** in the General setup page of Axis II and that these communication values are also set on the Visuscan/EDR setup screen.
3. Press any key to exit then print again. If the problem persists, contact immediately your local distributor or Quantel Medical.

7-2 ERROR MESSAGE: “NO PRINTER SELECTED”

When:
During printing.

Why:
The interface with the printing device (USB printer) might have trouble or is disconnected. The USB printer might also be switched off.
When using the EDR software with the USB cable plugged into the USB #2 port, this error message can also be displyed if the USB cable is disconnected or damaged.

How:
1. Check the USB printer cable is correctly plugged into the USB connector at the rear panel.
2. Verify that the USB printer is switched on.
3. The serial output of the General setup page must be set to “Not used”.
4. Press any key to exit then print again. If the problem persists, contact immediately your local distributor or Quantel Medical.

EVOLUTION OF THE CONFIGURATION (FROM V1.X TO V5.0)

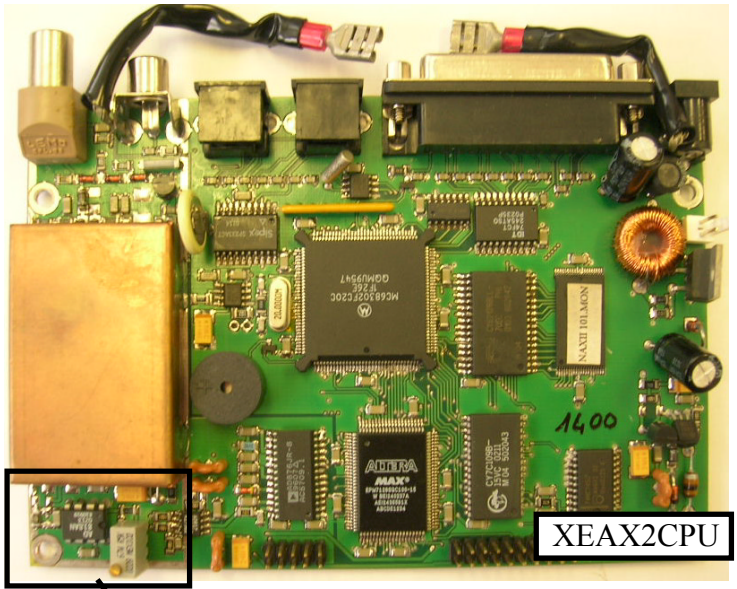
AXIS II Software version	V 1.xx	V 2.x	V 3.x	V 4.0-4.02	V 4.04	V 5.0
Configuration						
H/W config	// port	// port	// port	USB ports for printers only (no // ports)	USB ports for USB Keyboard + USB Key + USB Hub	Same USB ports as V4,04 + Pachymetry connector
Mini-B USB port	-	-	-	Only for QM internal use	to be used with EDR	to be used with EDR
Adaptor // USB	Yes	Yes	Yes	-	-	-
Printer	//	//	//	USB	USB	USB
LCD Screen	B&W	B&W	Color	Color	Color	Color
Bio probe	TP-01b	TP-01b	TP-01b	TP-01b	TP-01b	TP-01b
Bio probe w/ laser pointer	-	-	-	-	-	ProBeam
Pachy probe	-	-	-	-	-	P1
Handle	-	-	-	-	-	Yes
Upgrade						
Upgrade to next S/W version	up to V1.11	up to V2.04	up to V3.05	up to V4.04	N/A	N/A
Features						
Visuscan	Yes via serial port	Yes via serial port	Yes via serial port	Yes via serial port	Yes via serial port	Yes via serial port
EDR	Yes via serial port	Yes via serial port	Yes via serial port	Yes via serial port	Yes via serial+USB ports	Yes via serial+USB ports
D1 & D2 setup	-	Yes	Yes	Yes	Yes	Yes
Post-refractive	-	-	Yes	Yes	Yes	Yes
Pachy option (via keycode)	-	-	-	-	-	Yes
IOP correction tables	-	-	-	-	-	Yes

APPENDIX - A (2/8)

The purpose of this section is to detail the evolution between the different software versions of the Axis II : 1.xx, 2.xx, 3.xx and 4.xx in terms of hardware.

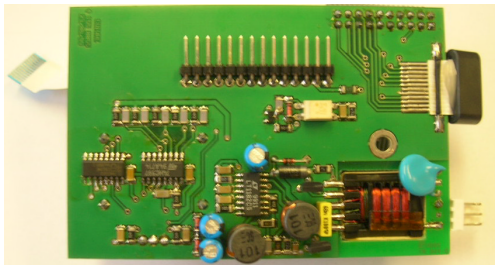
The screen display of versions 1.xx and 2.xx is black and white. The video board and the LCD screen are identical for both versions of CPU board.

CPU board for software version 1.xx



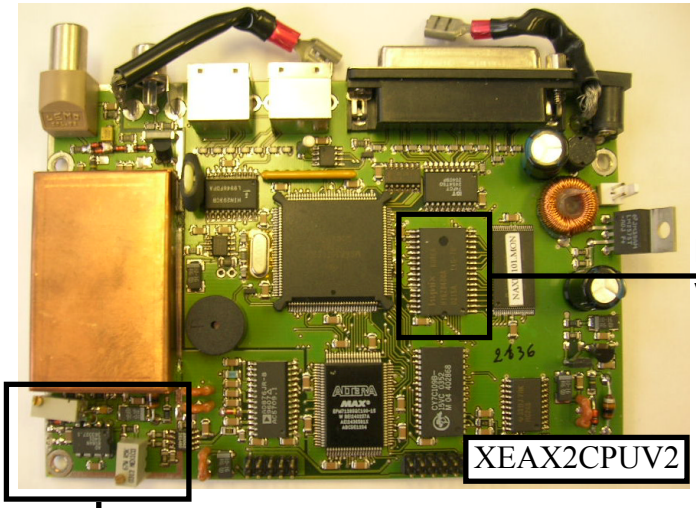
Only one potentiometer

Video board for software versions 1.xx and 2.xx :



XEAX2PCBVIDEO

CPU board for software version 2.xx



RAM circuit : 128K for 2.xx software version Reference : CY62128BLL

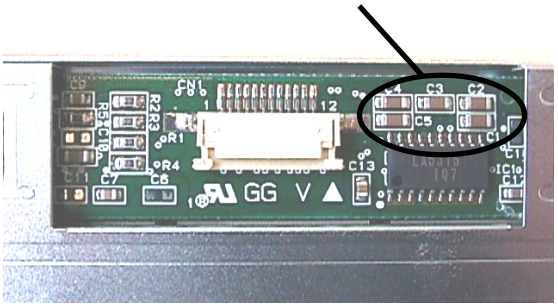
Two potentiometers

LCD screens

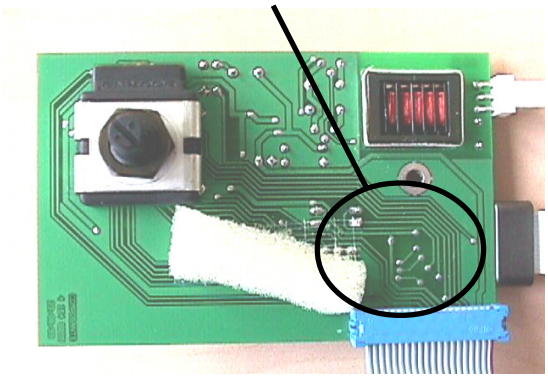
Two generations of black and white LCD screen have been installed on the Axis II. They are compatible with the Axis II software versions 1.xx and 2.xx.

To differentiate the two screens, you must check the small components located on the LCD screen board as below :

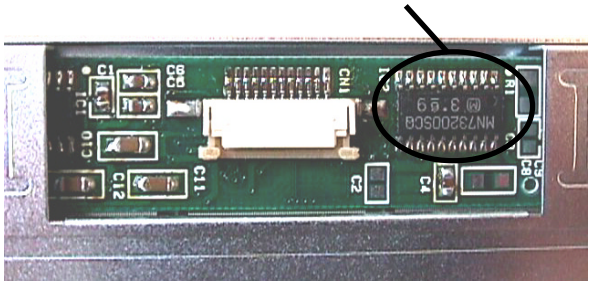
LCD Screen First Generation : Capacitors



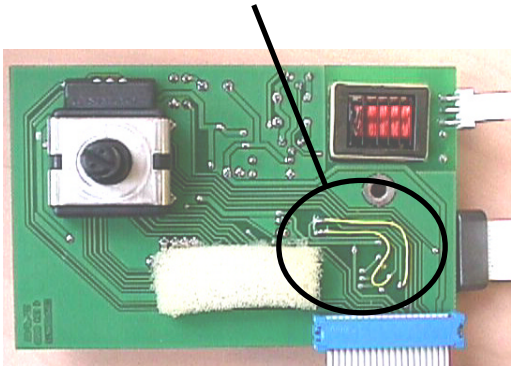
LCD Sreen **First Generation** is compatible with the video Interface Board of the **First Generation**, **without wirings :**



LCD Screen Second generation : No Capacitor
Since the Axis II s/n 2219 and Interface Board s/n 1736



LCD Sreen **Second Generation** is compatible with the video Interface Board of the **Second Generation**, **with wirings :**



Important:
The ribbon cable must be connected with the blue mark down.
When a Video Interface Board is connected to an LCD screen that is not compatible, the display contrast will be reversed and cannot be adjusted. In this case, the video interface board must be modified to get the correct control of the contrast. See next page.

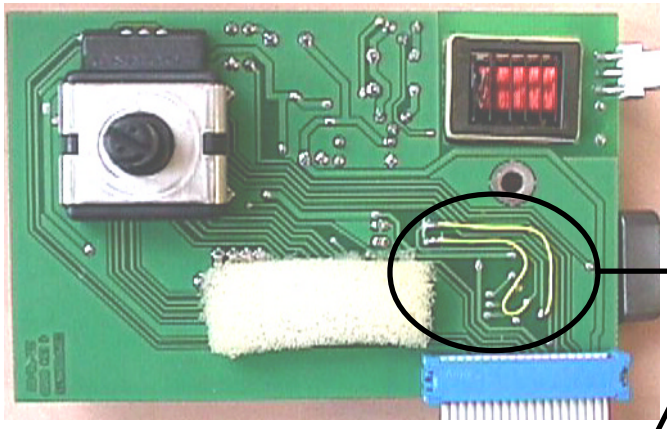
APPENDIX - A (4/8)

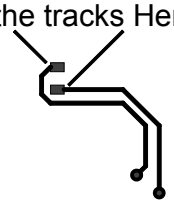
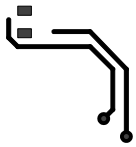
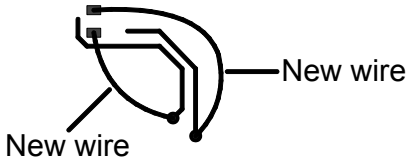
Video interface board

To upgrade a Video Interface Board First Generation into Second Generation, follow the procedure as below:

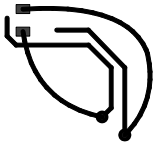
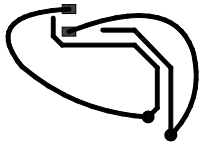
a) Cut the two tracks located between :
- **pin 11 of connector J1** and **pin 3 of the IC2 circuit**
- **pin 12 of connector J1** and **pin 4 of the IC2 circuit**

b) Reverse the signal of the contrast by connecting a wire between :
- **pin 11 of connector J1** and **pin 4 of the IC2 circuit**
- **pin 12 of connector J1** and **pin 3 of the IC2 circuit**

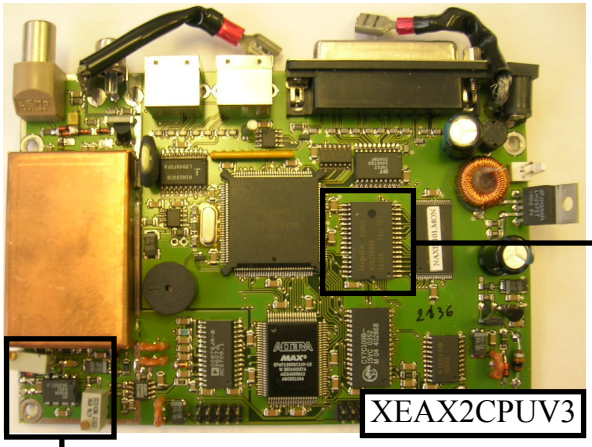


Cut the tracks Here	The tracks are cut	Connect new wires to reverse the contrast signal :
		

To use a second generation video Interface Board with a first generation of LCD screen, you can use the same wiring and change the way they are connected, as indicated below :

Original connection for second generation of LCD screen :	**Reverse the wires to use the video board with a first generation of LCD screen :**
	

CPU board for software version 3.xx

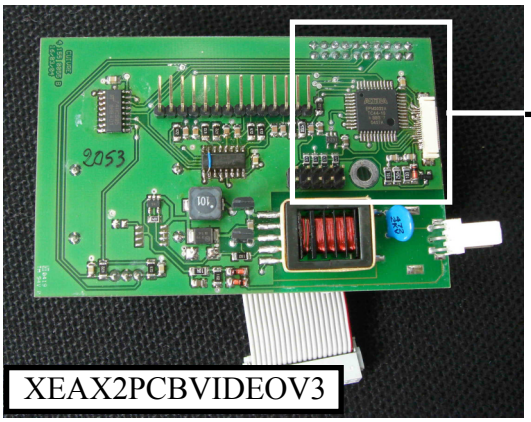


RAM circuit : 512K for 3.xx
software version
to control the Color LCD screen.
Reference : HY628400A

Two potentiometers

The main differentiator of the CPU board (for software version 2.xx or 3.xx) is the configuration of the jumper that is on the soldering side (see next paragraph for further details).

Interface board for software version 3.xx



This shows the main differentiator of the video interface board for the color screen

MAX version on the CPU boards

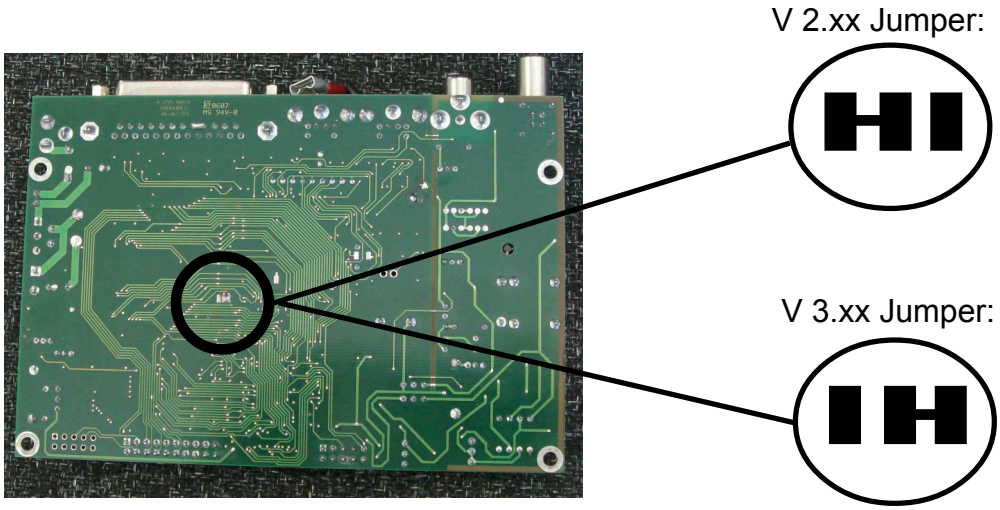
The Max version is «bio200.pof» for the V3 CPU board (that controls color screens) and «bio100.pof» for the V2 CPU board (that controls B&W screens). Installation is performed by using «quartus.exe». With new CPU boards (for S/W versions 4.xx and 5.xx, the Max version is included in the software version.

Note: No modification should be made to this Quantel Medical.

APPENDIX - A (6/8)

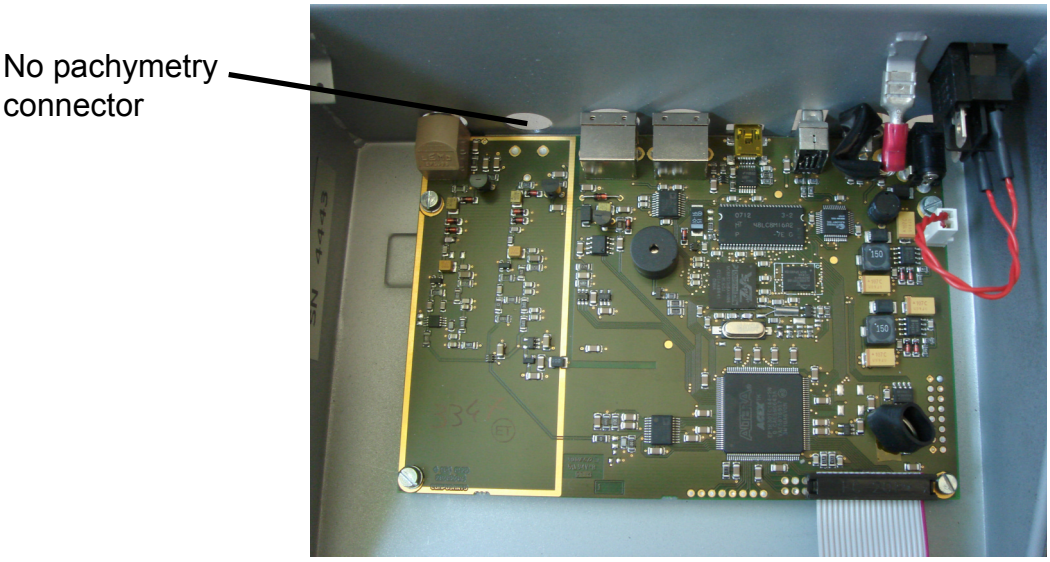
How to differentiate CPU boards (V2.xx vs. V3.xx)

In order to differentiate the CPU boards for software versions 2.xx and 3.xx, the jumper on the soldering side is set as follows:



CPU board (for software version V4.xx)

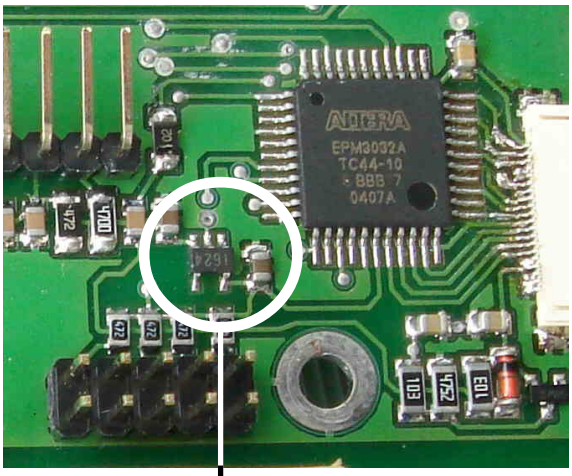
This board is very similar to the one for software version 5.00 except that it does not have the pachymetry connector and the related wiring.



Note: the pachymetry option cannot be installed on a CPU board designed for software version 4.xx because the pachymetry probe needs specific sensitivity that requires some electronic modification on the CPU board.

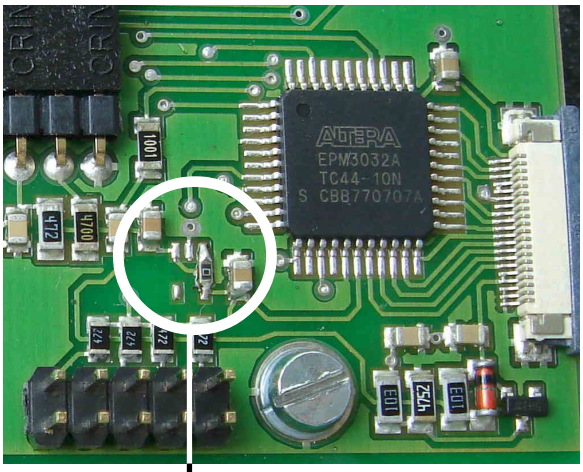
How to differentiate video interface boards (V3 vs. V5)

XEAX2PCBVIDEOV3



IC2 present

XEAX2PCBVIDEOV5



IC2 replaced by a jumper

APPENDIX - A (8/8)

Internal configuration evolution

AxisII S/W version	CPU board	Interface board XEAX2PCBVIDEO	Interface board XEAX2PCBVIDEOV3 (IC2 present)	Interface board XEAX2PCBVIDEOV5 (IC2 replaced by jumper)	Characteristics	µprocessor	RAM size
V1.xx	XEAX2CPU MAX version: "bio100.pof"	OK	-	-	.1 potentiometer (adjustment of dynamic)	MC68302	
V2.xx	XEAX2CPUV2 MAX version: "bio100.pof"	OK	-	-	.2 potentiometers (adjustment of noise and dynamic) .jumper on left		128K
V3.xx	XEAX2CPUV3 MAX version: "bio200.pof"	-	OK	-	.2 potentiometers (adjustment of noise and dynamic) .jumper on right		512K
V4.xx	XEAX2CPUV5 MAX version included in software version	-	-	OK	.No potentiometer (adjustment via hidden screen) .No pachymetry connector	MC68SZ328	8M DRAM
V5.00	XEAX2CPUV5 MAX version included in software version	-	-	OK	.No potentiometer (adjustment via hidden screen) .Pachymetry connector		

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Written by R. DION	
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